

**Supplementary Table S1:** The effects of VSMC activation and eNOS blockade on the geometrical and the isobaric biomechanical properties of isolated aortic segments.

	$\langle P \rangle$ (mmHg)	D <sub>0</sub> (mm)			Compliance ( $\mu\text{m}/\text{mmHg}$ )			Ep (mmHg)		
		KR	PE	PE+LN	KR	PE	PE+LN	KR	PE	PE+LN
Absolute values	60	0.88 (0.03)	0.88 (0.04) <sup>1</sup>	0.79 (0.03) <sup>3,c</sup>	3.40 (0.10)	2.87 (0.16) <sup>3</sup>	1.62 (0.15) <sup>3,c</sup>	259 (15)	305 (11)	493 (65) <sup>3,c</sup>
	80	0.95 (0.03)	0.94 (0.04) <sup>3</sup>	0.84 (0.03) <sup>3,c</sup>	3.71 (0.05)	3.07 (0.22) <sup>3</sup>	1.69 (0.09) <sup>3,c</sup>	257 (10)	306 (11)	497 (42) <sup>3,c</sup>
	100	1.04 (0.02)	1.01 (0.04) <sup>3</sup>	0.89 (0.04) <sup>3,c</sup>	3.70 (0.04)	3.06 (0.24) <sup>3</sup>	1.66 (0.05) <sup>3,c</sup>	280 (9)	330 (16)	537 (32) <sup>3,c</sup>
	120	1.12 (0.03)	1.08 (0.05) <sup>3</sup>	0.95 (0.04) <sup>3,c</sup>	3.31 (0.04)	2.89 (0.21) <sup>3</sup>	1.64 (0.04) <sup>3,c</sup>	339 (7)	375 (13)	578 (24) <sup>3,c</sup>
	140	1.21 (0.03)	1.16 (0.05) <sup>3</sup>	1.01 (0.04) <sup>3,c</sup>	2.64 (0.09)	2.52 (0.18) <sup>1</sup>	1.58 (0.05) <sup>3,c</sup>	459 (12)	460 (16)	638 (19) <sup>3,c</sup>
	160	1.29 (0.02)	1.23 (0.05) <sup>3</sup>	1.07 (0.04) <sup>3,c</sup>	1.92 (0.12)	2.09 (0.10) <sup>2</sup>	1.46 (0.03) <sup>3,c</sup>	675 (38)	588 (10) <sup>2</sup>	733 (19) <sup>c</sup>
	180	1.36 (0.03)	1.29 (0.06) <sup>3</sup>	1.14 (0.04) <sup>3,c</sup>	1.32 (0.14)	1.66 (0.07) <sup>3</sup>	1.36 (0.07) <sup>c</sup>	1042 (105)	776 (39) <sup>3</sup>	837 (34) <sup>3</sup>
	200	1.41 (0.03)	1.35 (0.06) <sup>3</sup>	1.21 (0.03) <sup>3,c</sup>	0.94 (0.12)	1.30 (0.09) <sup>3</sup>	1.23 (0.04) <sup>c</sup>	1515 (182)	1044 (89) <sup>3</sup>	986 (23) <sup>3</sup>
ΔD <sub>0</sub> (mm)										
		PE		PE+LN		ΔCompliance ( $\mu\text{m}/\text{mmHg}$ )		ΔEp (mmHg)		
Absolute isobaric change versus KR	60	-0.00 (0.02)	-0.09 (0.02) <sup>c</sup>	-	-	-0.53 (0.22)	-1.78 (0.08) <sup>c</sup>	47 (14)	234 (50) <sup>c</sup>	
	80	-0.01 (0.02)	-0.11 (0.01) <sup>c</sup>	-	-	-0.63 (0.26)	-2.01 (0.05) <sup>c</sup>	49 (17)	241 (33) <sup>c</sup>	
	100	-0.03 (0.03)	-0.14 (0.02) <sup>c</sup>	-	-	-0.64 (0.27)	-2.04 (0.06) <sup>c</sup>	50 (20)	258 (24) <sup>c</sup>	
	120	-0.04 (0.03)	-0.18 (0.02) <sup>c</sup>	-	-	-0.42 (0.22)	-1.68 (0.08) <sup>c</sup>	35 (18)	238 (21) <sup>c</sup>	
	140	-0.06 (0.03)	-0.21 (0.02) <sup>c</sup>	-	-	-0.13 (0.19)	-1.07 (0.10) <sup>c</sup>	1 (23)	179 (25) <sup>c</sup>	
	160	-0.06 (0.04)	-0.22 (0.01) <sup>c</sup>	-	-	0.17 (0.12)	-0.46 (0.13) <sup>c</sup>	-87 (32)	58 (49) <sup>c</sup>	
	180	-0.07 (0.04)	-0.22 (0.01) <sup>c</sup>	-	-	0.35 (0.09)	0.05 (0.10) <sup>c</sup>	-265 (90)	-204 (92) <sup>a</sup>	
	200	-0.06 (0.04)	-0.20 (0.02) <sup>c</sup>	-	-	0.36 (0.08)	0.29 (0.10)	-471 (165)	-529 (178) <sup>a</sup>	
ΔD <sub>0</sub> (%)										
		PE		PE+LN		ΔCompliance (%)		ΔEp (%)		
Relative isobaric change versus KR	60	-0.3 (2.4)	-10.0 (1.9) <sup>c</sup>	-	-	-15.4 (6.2)	-52.4 (3.2) <sup>c</sup>	18.3 (6.4)	89.9 (14.1) <sup>c</sup>	
	80	-1.4 (2.6)	-11.7 (1.6) <sup>c</sup>	-	-	-17.1 (6.7)	-54.3 (1.8) <sup>c</sup>	19.3 (7.1)	93.5 (10.2) <sup>c</sup>	
	100	-2.8 (2.5)	-14.0 (1.9) <sup>c</sup>	-	-	-17.4 (7.0)	-55.2 (1.3) <sup>c</sup>	18.1 (7.5)	92.0 (6.6) <sup>c</sup>	
	120	-3.9 (2.7)	-15.9 (1.6) <sup>c</sup>	-	-	-12.7 (6.5)	-50.6 (1.7) <sup>c</sup>	10.5 (5.6)	70.2 (6.1) <sup>c</sup>	
	140	-4.6 (2.8)	-17.0 (1.7) <sup>c</sup>	-	-	-4.7 (7.0)	-40.3 (2.8) <sup>c</sup>	0.4 (5.1)	39.1 (6.3) <sup>c</sup>	
	160	-5.0 (2.8)	-17.0 (1.8) <sup>c</sup>	-	-	9.0 (6.7)	-23.6 (5.7) <sup>c</sup>	-12.7 (4.0)	9.0 (7.5) <sup>c</sup>	
	180	-5.2 (2.8)	-16.3 (1.1) <sup>c</sup>	-	-	27.1 (10.6)	4.1 (8.6) <sup>c</sup>	-25.1 (5.7)	-19.1 (6.5)	
	200	-4.3 (2.6)	-13.9 (1.4) <sup>c</sup>	-	-	38.9 (13.6)	32.3 (16.6)	-30.6 (7.3)	-34.3 (7.1)	

Values are shown as mean (SD) with n=5 for all conditions. Repeated measures two-way ANOVA with Bonferroni post-hoc test for multiple comparisons

<sup>1,2,3</sup>: P<0.05. P<0.01. P<0.001 vs. KR and <sup>a,b,c</sup>: P<0.05. P<0.01. P<0.001 vs PE/ΔPE. KR: Krebs-Ringer, PE: 1  $\mu\text{M}$  phenylephrine; LN: 300  $\mu\text{M}$  L-NAME